

Application No. 10/020,152

Page 2

March 4, 2004

Reply to Office Action mailed November 24, 2003

In the Claims:

Please amend Claims 1, 10, 18 as follows below.

Following entry of the amendments, the pending claims in the present application read as follows:

Claims:

WHAT IS CLAIMED IS:

- 1 1. (Currently amended) An agricultural vehicle including an integrated combine reel hydro-  
2 mechanical drive system, the drive system being a single integrated hydraulic circuit containing  
3 [[a]] hydraulic fluid and including a hydraulic reservoir, the single hydraulic circuit comprising:  
4 a hydraulic header circuit connected to the reservoir and supplying hydraulic fluid to  
5 activate a steering mechanism; and  
6 a variable pump connected to the reservoir and disposed in the single circuit to pump  
7 hydraulic fluid to the header circuit,  
8 wherein the header circuit comprises an implement circuit supplying hydraulic fluid to an  
9 implement valve stack; a steering circuit supplying hydraulic fluid to activate the steering  
10 mechanism, a reel circuit supplying hydraulic fluid to a reel valve stack, as well as a load sensing  
11 line connected to the steering circuit, the implement valve stack, the reel valve stack, and to the  
12 variable pump so that a combined hydraulic load carried by the header circuit is sensed by the  
13 variable pump, and  
14 wherein the variable pump operates to vary the amount of hydraulic fluid pumped in  
15 response to the sensed hydraulic load.

Application No. 10/020,152

Page 3

March 4, 2004

Reply to Office Action mailed November 24, 2003

1 2. (Cancelled)

1 3. (Previously presented) An agricultural vehicle according to claim 1, wherein the  
2 implement valve stack includes a priority valve that operates to preferentially supply hydraulic  
3 fluid to the steering circuit so that the steering circuit maintains the activation of the steering  
4 mechanism.

1 4. (Previously presented) An agricultural vehicle according to claim 1, wherein the reel  
2 valve stack comprises a first directional valve that operates to supply hydraulic fluid to activate a  
3 reel drive and a second directional valve that operates to supply hydraulic fluid to activate a reel  
4 positioning mechanism.

1 5. (Original) An agricultural vehicle according to claim 3, wherein the reel valve stack  
2 includes a first directional valve that operates to supply hydraulic fluid to activate a reel drive  
3 and a second directional valve that operates to supply hydraulic fluid to activate a reel  
4 positioning mechanism.

1 6. (Original) An agricultural vehicle according to claim 5, wherein the implement valve  
2 stack further includes a third directional valve that operates to supply hydraulic fluid to activate a  
3 header adjusting apparatus.

1 7. (Original) An agricultural vehicle according to claim 6, wherein each of the first  
2 directional valve, the second directional valve, and the third directional valve is a solenoid  
3 operated directional valve.

Application No. 10/020,152

Page 4

March 4, 2004

Reply to Office Action mailed November 24, 2003

1 8. (Cancelled)

1 9. (Original) An agricultural vehicle according to claim 6, wherein each of the first  
2 directional valve, the second directional valve, and the third directional valve is a solenoid  
3 operated directional valve that is operationally controlled by an on board computer.

1 10. (Currently amended) An integrated combine reel hydro-mechanical drive system for use  
2 in an agricultural vehicle, the drive system being a single integrated hydraulic circuit containing  
3 [[a]] hydraulic fluid and including a hydraulic reservoir, the single hydraulic circuit comprising:  
4 a hydraulic header circuit connected to the reservoir and supplying hydraulic fluid to  
5 activate a header implement and a reel of the header implement; and  
6 a variable pump connected to the reservoir and disposed in the single circuit to pump  
7 hydraulic fluid to the header circuit,  
8 wherein the header circuit further comprises an implement circuit supplying hydraulic  
9 fluid to an implement valve stack, a steering circuit supplying hydraulic fluid to activate a  
10 steering mechanism, and a reel circuit supplying hydraulic fluid to a reel valve stack, as well as a  
11 load sensing line connected to the steering circuit, the implement valve stack, the reel valve  
12 stack, and to the variable pump so that a combined hydraulic load carried by the header circuit is  
13 sensed by the variable pump,  
14 and wherein the variable pump operates to vary the amount of hydraulic fluid pumped in  
15 response to the sensed hydraulic load.

1 11. (Cancelled)

Application No. 10/020,152

Page 5

March 4, 2004

Reply to Office Action mailed November 24, 2003

1 12. (Previously presented) An integrated combine reel hydro-mechanical drive system  
2 according to claim 10, wherein the implement valve stack includes a priority valve that operates  
3 to preferentially supply hydraulic fluid to the steering circuit so that the steering circuit maintains  
4 the activation of the steering mechanism.

1 13. (Previously presented) An integrated combine reel hydro-mechanical drive system  
2 according to claim 10, wherein the reel valve stack comprises a first directional valve that  
3 operates to supply hydraulic fluid to activate a reel drive and a second directional valve that  
4 operates to supply hydraulic fluid to activate a reel positioning mechanism.

1 14. (Original) An integrated combine reel hydro-mechanical drive system according to claim  
2 12 wherein the reel valve stack includes a first directional valve that operates to supply hydraulic  
3 fluid to activate a reel drive and a second directional valve that operates to supply hydraulic fluid  
4 to activate a reel positioning mechanism.

1 15. (Original) An integrated combine reel hydro-mechanical drive system according to claim  
2 14, wherein the implement valve stack further includes a third directional valve that operates to  
3 supply hydraulic fluid to activate a header adjusting apparatus.

1 16. (Original) An integrated combine reel hydro-mechanical drive system according to claim  
2 15, wherein each of the first directional valve, the second directional valve, and the third  
3 directional valve is a solenoid operated directional valve.

1 17. (Cancelled)

Application No. 10/020,152

March 4, 2004

Page 6

Reply to Office Action mailed November 24, 2003

1 18. (Currently amended) An agricultural vehicle including an integrated combine reel hydro-  
2 mechanical drive system, the drive system being a single integrated hydraulic circuit containing  
3 [[a]] hydraulic fluid and including a hydraulic reservoir, the single hydraulic circuit comprising:  
4 a hydraulic header circuit connected to the reservoir and supplying hydraulic fluid to  
5 activate a steering mechanism; and  
6 a variable pump connected to the reservoir and disposed in the single circuit to pump  
7 hydraulic fluid to the header circuit, wherein the variable pump is connected to the hydraulic  
8 header circuit via a load sensing line such that a combined hydraulic load carried by the header  
9 circuit is sensed by the variable pump, and the variable pump operates to vary the amount of  
10 hydraulic fluid pumped in response to the sensed hydraulic load.